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Remarks

As stated above, the applicants appreciate the Examiner's thorough examination of the subject application and request reexamination and reconsideration of the subject application in view of the preceding amendments and the following remarks.

Currently, claims 1-16 are pending in the subject application, of which claims 1, 9, and 13 are independent claims, and claims 2-8, 10-12, and 14-16 are dependent claims.

Independent claim 1 has been amended herein to remove the redundant occurrence of the word "parameter" with regards to the second input signal modeling parameter calculation means. As this amendment only corrects a readily-apparent clerical error, no new matter is believed entered by this amendment.

Concerning Item 1 of the subject action, the Examiner objects to claim 15 under 37 CFR §1.75(c) for failing to further limit the subject matter of the previous claim. Claim 14 has been amended consistent with the disclosure at paragraphs [0075]-[0076] of the application as published. No new matter is believed entered by the amendments.

In amended claim 14, Applicants claim:

> 14. (amended) The server as claimed in claim 13, comprising means for downloading software resources via the telecommunications network to a terminal, the software resources including at least part of the first parameter calculation means or recognition means of the terminal.

In claim 15, Applicants claim:

> 15. (Original) The server as claimed in claim 14, comprising means for downloading voice recognition software resources via the telecommunications network to a terminal.

As amended, claim 15 recites that the server comprises means for downloading voice recognition software resources. Claim 14 further limits the subject matter of claim 15 by defining the software resources as including at least part of the first parameter calculation means or the recognition means of the terminal. Withdrawal of this objection is respectfully requested in view of the foregoing amendments.

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Concerning Item 3 of the subject action, the Examiner rejects claim 16 under 35 USC §112, second paragraph, for the asserted reason that the term "if" renders the claim indefinite. Applicant respectfully notes that this rejection appears to be in error, as claim 16 does not include the term "if."

Applicants note that the manner in which the Examiner interprets the claim for the purpose of prosecution, as stated in the subject action, appears to correlate to the clauses of claims 1 and 13 that include the term "if." Assuming the Examiner intended to direct this rejection at one, or both, of claims 1 and 13, Applicants respectfully disagree with the Examiner's assertion that the term "if" renders the claim(s) "open loop."

In independent claim 1, Applicants claim:

> 1. (Currently Amended) A distributed speech recognition system comprising at least one user terminal and at least one server suitable for communication with one another via a telecommunications network, wherein the user terminal comprises:
> - means for obtaining an audio signal to be recognized;
> - first audio signal modeling parameter calculation means; and
> - first control means for selecting at least one signal to be transmitted to the server, from the audio signal to be recognized and a signal indicating the calculated modeling parameters.
>
> and wherein the server comprises:
> - means for receiving the selected signal originating from the user terminal;
> - second input signal modeling parameter calculation means;
> - recognition means for associating at least one stored form with input parameters; and
> - second control means for *controlling the second calculation means and the recognition means in order,*
>   - *if the selected signal received by the reception means is an audio signal, to activate the second parameter calculation means by addressing the selected signal to them as an input signal, and to address the parameters calculated by the second calculation means to the recognition means as input parameters, and*
>   - *if the selected signal received by the reception means indicates modeling parameters, to address said indicated parameters to the recognition means as input parameters.*

Similarly, in independent claim 13, Applicants claim:

13. (Previously Presented) A server in a distributed speech recognition system comprising at least one user terminal adapted for communication with said server, said server comprising:

- means for receiving, from a user terminal, a signal selected at said terminal;
- input signal modeling parameter calculation means;
- recognition means for associating at least one stored form with input parameters; and
- control means for *controlling the second calculation means and the recognition means, in order,*

if the selected signal received by the reception means is an audio signal, to activate the parameter calculation means by addressing the selected signal to them as an input signal, and to address the parameters calculated by the calculation means to the recognition means as input parameters, and

if the selected signal received by the reception means indicates modeling parameters, to address said indicated parameters to the recognition means as input parameters.

In each of claims 1 and 13 the two "if" clauses define the operation of the control means of the server for each of the two possible signals that may be received by the reception means of the server. Specifically, the "if" clauses define the operation of control means of the server "if the selected signal received by the reception means is an audio signal" and "if the selected signal received by the reception means indicates modeling parameters." As these are the only two signals claimed and the operation of the control means of the server is defined for each possible signal, Applicants respectfully submit that claims 1 and 13 are, in fact, definite. Withdrawal of this rejection is respectfully requested in view of the foregoing discussion.

Regarding Item 5 of the subject application, the Examiner rejects claims 9 and 11 as being anticipated under 35 USC §102(a) by Thelen et al. (US Patent No. 6,487,534)

In previously presented claim 9, Applicants claim:

9. (Previously Presented) A user terminal in a distributed speech recognition system comprising one server suitable for communication with said user terminal, said user terminal comprising:

- means for obtaining an audio signal to be recognized;
- audio signal modeling parameter calculation means; and
- *first control means for selecting at least one signal to be transmitted to a server, from the audio signal to be recognized and a signal indicating calculated modeling parameters.* (Emphasis added)

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In previously presented claim 11, Applicants claim:

> 11. (Previously Presented)   The terminal as claimed in claim 9, furthermore comprising recognition means to associate at least one stored form with the modeling parameters.

Applicants respectfully submit that Thelen et al. fail to disclose "a first control means for selecting at least one signal to be transmitted to a server" in which the signal is selected from either "the audio signal to be recognized" or "a signal indicating calculated modeling parameters," as claimed in Applicants' independent claim 9.   Accordingly, Applicants respectfully submit that Thelen et al. does not anticipate the invention of independent claim 9, or claim 11 depending thereupon.

Regarding the first control means, the subject application discloses, in paragraph [0047] of the application as published:

> The terminal 2 comprises a *microphone 4, which picks up the speech* to be recognized from a user *in the form of an audio signal*. The terminal 2 also comprises a *modeling parameter calculation module 6*, which, in a manner known per se, *performs an acoustic analysis which enables the extraction of the relevant parameters of the audio signal*, and which may possibly advantageously perform a noise reduction function. The terminal 2 comprises *a controller 8, which selects a signal from the audio signal and a signal indicating the parameters* calculated by the parameter calculation module 6.   It furthermore comprises an *interface 10 for transmission on the network of the selected signal to the server*. (Emphasis added)

Accordingly, the subject application discloses that the terminal 2 may transmit to the server 1 either the *audio signal* picked up by a microphone *or* a *signal indicating modeling parameters* of the audio signal calculated by a modeling parameter calculation module 6.

Applicants respectfully assert that Thelen et al. fail to disclose such a system. Specifically, Thelen et al. disclose a system in which the client station only determines whether the speech signal should be sent to the server station. In this regard, Thelen et al. disclose:

> The client station 330 further includes a speech controller 335. The *speech controller 335* analyzes the outcome of the recognition by the local recognizer 334 and, *in dependence on the outcome of the recognition, selectively directs a part of the speech input signal via the network 350 to the server station 310*. To this end, the client station 330 includes a *controllable switch 336 which*

determines whether or not the speech input received via the interface 331 (and analyzed by the analyzer 333) *is sent* by means of the communication interface 332 *to the server station 310*. Depending on the task of the local recognizer 334 and the load which may be put on the client station 330, the speech controller 335 may use a further switch to only transfer part of the speech input signal to the local speech recognizer 334. For instance, the client station 330 may include a speech activity detector which, for instance based on the energy level of the received input signal, determines whether or not the user might be speaking. If the user is not speaking (the level is below a threshold), the signal need not be directed to the local recognizer 334. (Column 8, lines 7-25, emphasis added)

Accordingly, Thelen et al. do not teach a control means for selecting at least one signal to be transmitted to a server, from the audio signal to be recognized and a signal indication calculated modeling parameters. Rather, Thelen et al. disclose a system that merely determines whether or not a speech input is sent to the server station. The system does not select between two signals and transmit the selected one of the signals to a server.

In view of the foregoing distinctions, Applicants respectfully submit that Thelen et al. do not anticipate independent claim 9, or claim 11 depending thereupon. Withdrawal of this rejection is, therefore, respectfully requested.

Concerning Item 7 of the subject action, the Examiner rejects claims 1-8, 10, and 12-16 as being obvious under 35 USC §103(a) over Thelen et al. in view of Yang et al. (US Publication No. 2004/0044522).

In independent claim 1, Applicants claim:

> 1. (Original)   A distributed speech recognition system comprising at least one user terminal and at least one server suitable for communication with one another via a telecommunications network, wherein the user *terminal comprises*:
> - means for obtaining an audio signal to be recognized;
> - first audio signal modeling parameter calculation means; and
> - *first control means for selecting at least one signal to be transmitted to the server, from the audio signal to be recognized and a signal indicating the calculated modeling parameters.*
>
> and wherein the *server comprises*:
> - means for receiving the selected signal originating from the user terminal;
> - second input signal modeling parameter calculation means;
> - recognition means for associating at least one stored form

with input parameters; and

-       *second control means for controlling the second
        calculation means and the recognition means in order,*

        •   *if the selected signal received by the reception
means is an audio signal, to activate the second parameter calculation
means* by addressing the selected signal to them as an input signal, and to
address the parameters calculated by the second calculation means to the
recognition means as input parameters, and

        •   *if the selected signal received by the reception means
indicates modeling parameters, to address said indicated parameters to
the recognition means* as input parameters.

In independent claim 13, Applicants claim:

13. (Previously Presented) A server in a distributed speech recognition
system comprising at least one user terminal adapted for communication
with said server, said *server comprising*:

-       means for receiving, from a user terminal, a signal selected at
        said terminal;
-       input signal modeling parameter calculation means;
-       recognition means for associating at least one stored form with
        input parameters; and
-       *control means for controlling the second calculation means
        and the recognition means, in order,*

        *if the selected signal received by the reception means is an audio
signal,* to *activate the parameter calculation means* by addressing the
selected signal to them as an input signal, and to address the parameters
calculated by the calculation means to the recognition means as input
parameters, and

        *if the selected signal received by the reception means indicates
modeling parameters, to address said indicated parameters to the
recognition means as input parameters.*

As discussed above, the subject application discloses and claims a system having a

terminal including, in part, "a first control means for selecting at least one signal to be

transmitted to a server" in which the first signal is "the audio signal to be recognized" or "a

signal indicating calculated modeling parameters." Additionally, the subject application

discloses and claims a server including, in part, "control means for controlling the second

calculation means and the recognition means" such that "if the selected signal received by the

reception means is an audio signal" the control means may "activate the parameter calculation

means by addressing the selected signal to them as an input signal, and to address the parameters

calculated by the calculation means to the recognition means as input parameters." "[I]f the selected signal received by the reception means indicates modeling parameters," the control means may "address said indicated parameters to the recognition means as input parameters."

Regarding the control means of the server, the application discloses:

The *controller 14 controls* the VAD module 16, the parameter calculation module 18 and the recognition engine 20 in order:

a/ *if the signal received* by the reception interface 12 *is an audio signal* and does not indicate speech segments obtained by voice activation detection, to activate the module VAD 16 by addressing the received signal to it as an input signal, then to *address the speech segments* extracted by the VAD module 16 *to the parameter calculation module 18* as input parameters, then to address the parameters calculated by these parameter calculation means 18 to the recognition engine 20 as input parameters;

b/ if the signal received by the reception interface 12 is an audio signal and indicates speech segments following voice activation detection, to activate the parameter calculation module 18 by addressing the received signal to it as an input signal, then to address the parameters calculated by this parameter calculation module 18 to the recognition engine 20 as input parameters;

c/ *if the signal received* by the reception interface 12 *indicates modeling parameters, to address said indicated parameters to the recognition engine 20* as input parameters. (Paragraphs [0049]-[0052] of the application as published, emphasis added)

Accordingly, the control means of the server directs the signal either to the input signal modeling parameter calculation means (and then to the recognition means) or to the recognition mean, depending upon the nature of the signal received from the terminal. Neither Thelen et al. nor Yang et al. alone, or together, teach such features.

Regarding the features of the server, the Examiner concedes, in the first paragraph on page 5 of the subject action, that Thelen et al. do not teach a second input signal modeling parameter calculation means, a second control means for controlling the second calculation means and the speech recognition means. Applicants agree.

In turning to Yang et al. to remedy the deficiencies of Thelen et al. the Examiner asserts Yang et al. teach that "the C-DSR server comprises a second control means (configuration controller for controlling the second calculation means and the speech recognition means (generating a recognition adjustment parameter). The C-DSR server receives message packets from the client mobile device, and generating adjustment speech recognition parameters

according to the configuration data, and then returns a result to the client mobile device after completing the recognition task." Applicants also agree with the Examiner's understanding of Yang et al., noting that Yang et al. disclose:

> Herein, the C-DSR server comprises of a parser, a configuration controller, a configurable distributed speech recognition engine, a history log, a diagnostic tool set, and configurable dialog system. The parser is used to parse and extract the configuration data and speech data in a packet. *The configuration controller is used to generate a recognition adjustment parameter according to the configuration data. The configurable distributed speech recognition engine is used to recognize the speech data passed from the parser, and is configurable to the configuration controller.* The history log is used to record the result or data generated from the server. The diagnostic tool set generates a diagnostic report according to data in the history log, for tuning the C-DSR engine. The configurable dialog system according to the recognition result to analyze possible lexicon may appearing in dialog, it's for raising the recognition rate and speed of the recognition engine next time. (Paragraph [0019] of the published application, emphasis added)

Applicants respectfully assert that the configuration controller disclosed by Yang et al. is not analogous to the claimed control means. In particular, as discussed above, the claimed control means controls the second calculation means and the recognition means such that, if the selected signal received from the terminal is an audio signal the control means activates the parameter calculation means of the server by addressing the audio signal to the parameter calculation module, and then addressing the parameters calculated by the parameter calculation means to the recognition means. The claimed control means further controls the recognition means such that if the signal received from the terminal indicates modeling parameters, the control means of the server addresses the indicated parameters to the recognition engine. See, e.g., claims 1 and 13 and above-quoted paragraphs [0049]-[0025] of the application as published.

In view of the foregoing, Applicants respectfully submit that the combined teachings of Thelen et al. and Yang et al. are insufficient to render the claimed invention obvious. As discussed, Thelen et al. fail to teach every aspect of the terminal claimed in claim 1. Additionally, the Examiner concedes that Thelen et al. fail to teach the control means of the server claimed in claims 1 and 13. Further, as discussed above, the asserted configuration controller disclosed by Yang et al. does not satisfy the claimed control means of the server.

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Applicants respectfully request that the rejection under 35 USC §103(a) of independent claims 1 and 13, and of claims 2-8, 10, 12, and 14-16 ultimately depending thereupon, be withdrawn upon consideration of the remarks herein.

Accordingly, in light of the above-described amendments and remarks, Applicants respectfully assert that the subject application is in condition for allowance. No new matter has been added by these amendments. While Applicants respectfully assert that the subject application is now in condition for allowance, the Examiner is invited to telephone Applicants' attorney (@ 617-305-2010) to facilitate prosecution of this application. Please apply any charges or credits to deposit account 50-2324.

Respectfully submitted,

May 4, 2007
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